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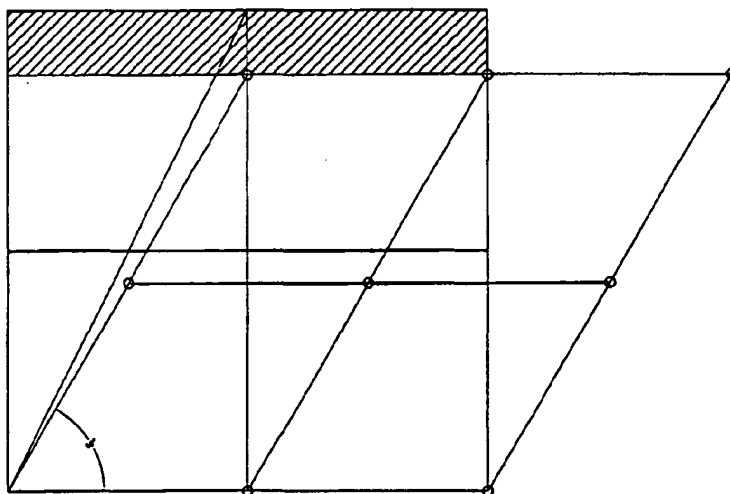
**Declarations under Rule 4.17:**

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— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE,

[Continued on next page]

(54) Title: GEOMETRICAL GARDEN ARRANGEMENT FOR INCREASING THE PRODUCTION



(57) Abstract: A better arrangement of gardens of fruits and vegetables to increase production by 15.47 %. The current arrangement is based on the square where the garden is divided into squares of certain length depending on the optimal distance between the trees. The new arrangement is based on the equilateral triangle where the garden is divided into equilateral triangles of sides equal to the optimum distance between the trees. If two triangles are joined together, four trees are placed on them and the resulting shape is diamond with angle equal to 60°. A square with the same base as this diamond will accommodate four trees, but the area of the diamond is 0.8660254037844 of the area of the

square which means an increase in the number of trees by 15.47005383798 %. To obtain this ratio, the shape of the garden should be one of the seven figures considered.

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DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR),  
OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
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ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

## GEOMETRICAL GARDEN ARRANGEMENT FOR INCREASING THE PRODUCTION

**1. The current situation**

The current arrangement of gardens of fruits and vegetables is based on the square figure that is a rectangular figure with equal sides. The trees are placed on the corners of the square. The side is equal to the optimal distance between the trees.

**2. The proposed arrangement**

The proposed arrangement is based on the equilateral triangle with side length equal to the optimal distance between the trees. By placing two equilateral triangles we obtain a diamond figure which is a special case of a parallelogram with one angle equal to  $60^\circ$ .

**3. The advantages of the new arrangement**

When we look the figure #1 we see a square and a diamond with one common base but the height of the diamond is equal to 0.8660254037844 of the height of the square which means that the area of the diamond is equal to 0.8660254037844 of the area of the square. The difference in area is equal to the area of the hachured rectangle. This means a horizontal increase in the effective area by 15.47005383798%, which means an increase of 15.47005383798% in the number of trees. This means an increase of 15.47005383798% in production.

**4. The Optimal Shape of the Garden**

The best figure of the garden is the figure that gives an integral number of equilateral triangles without any waste area. This includes the following figures:

1. Equilateral triangle (figure (2)).
  2. Diamond with angle equal to  $60^\circ$  (figure (3)).
  3. Trapezium which is formed by three equilateral triangles (figure (4)).
  4. Regular hexagon (figure (5)).
  5. Parallelogram with one angle equal to  $60^\circ$  (figure (6)).
  6. Isosceles trapezium with one angle equal to  $60^\circ$  (figure (7)).
  7. Hexagon with equal angles but two parallel sides longer than the other sides (figure (8)).
-

**A Geometric Arrangement of Gardens**  
**To Increase Production by 15.47%**

**PCT REQUEST**  
**OBEID, Abdul\_Rahman**

**Claim**

For the protection of the idea of equilateral triangular arrangement of gardens of fruits and vegetables.

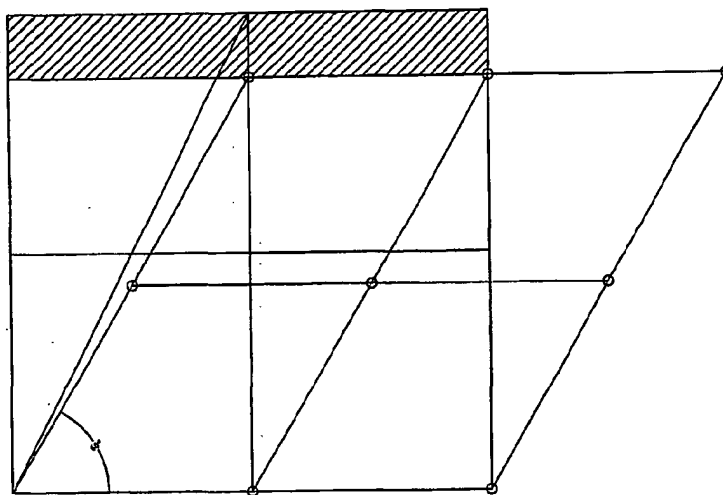


Figure (1)

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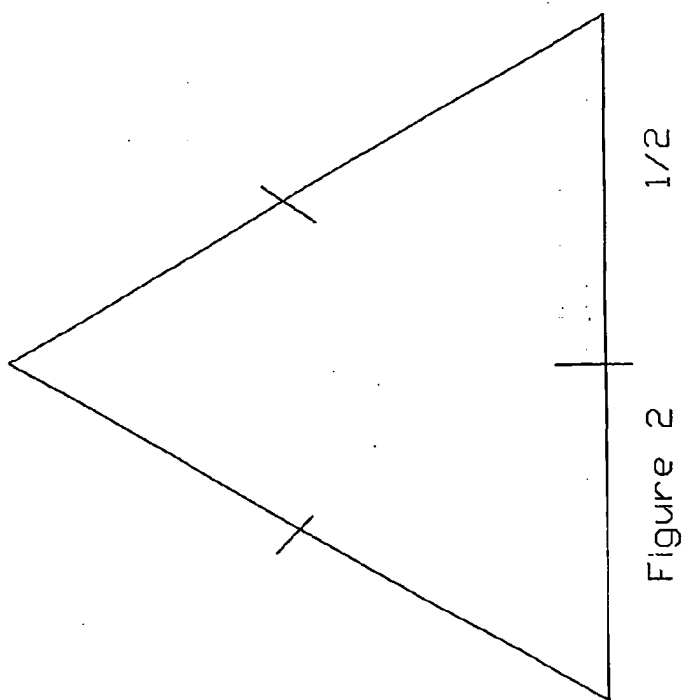


Figure 2

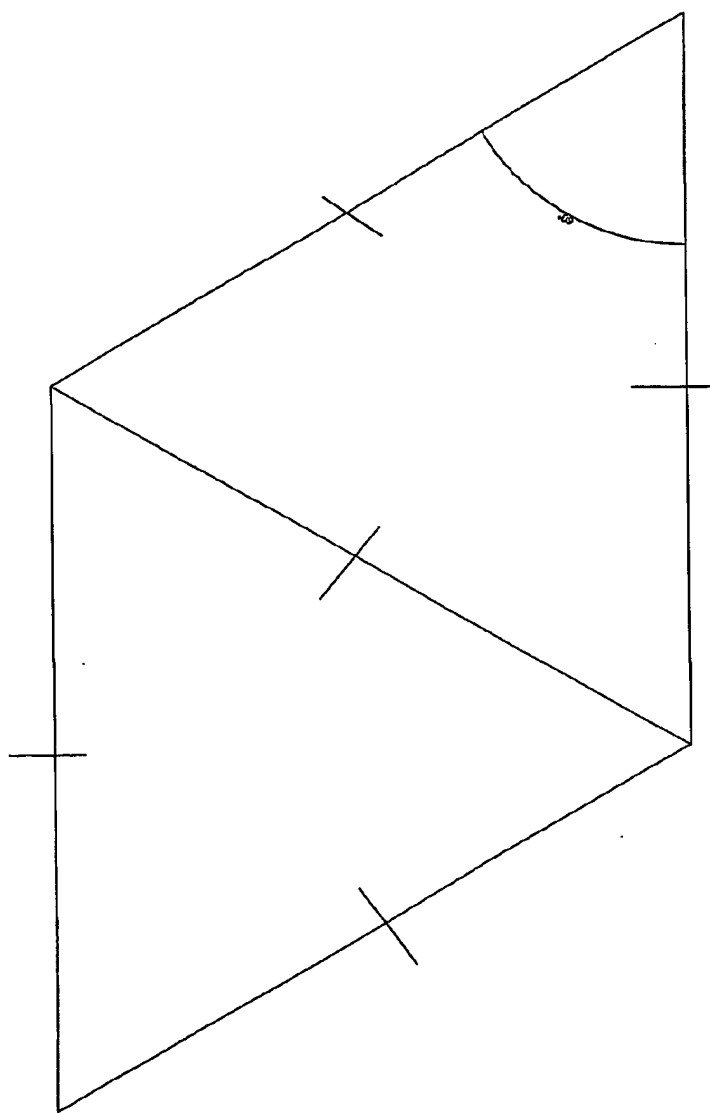
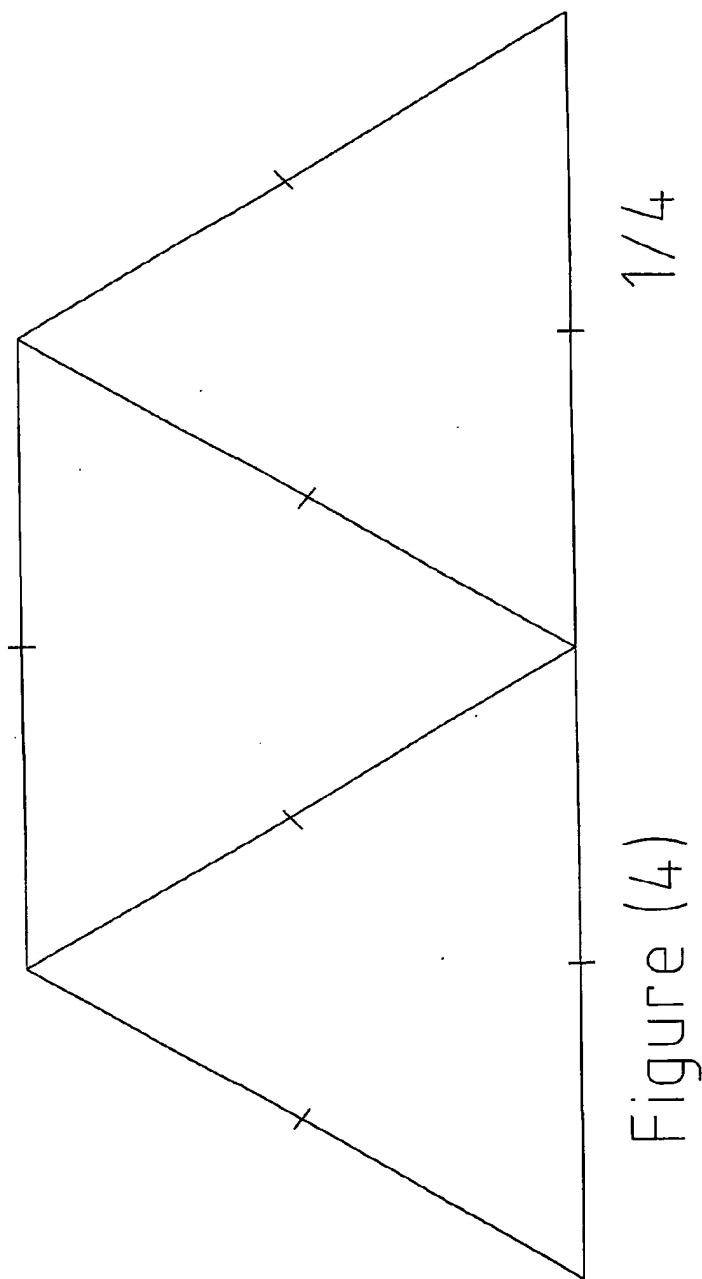
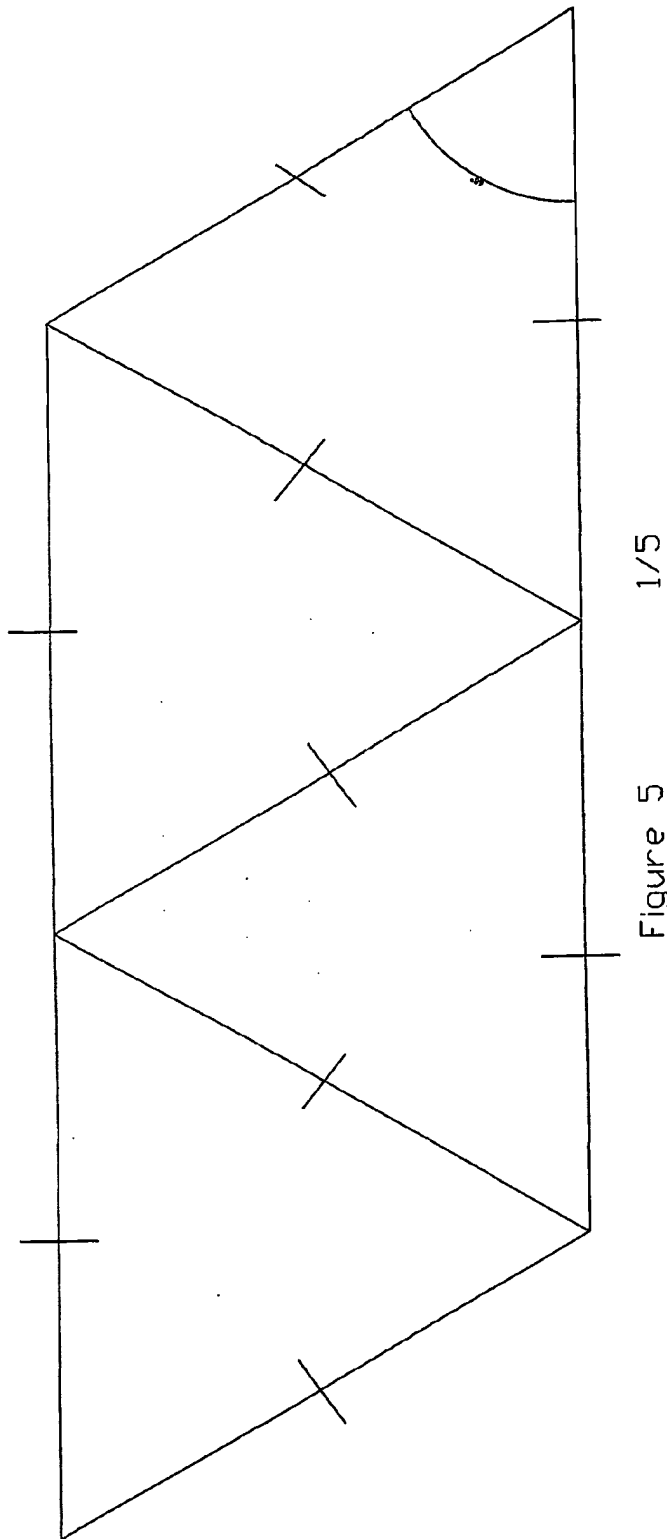
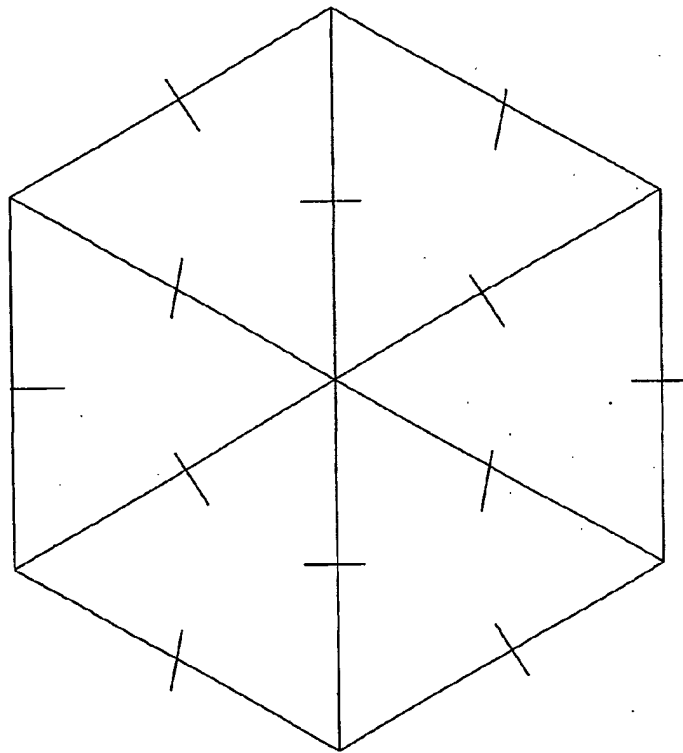


Figure 3 1/3



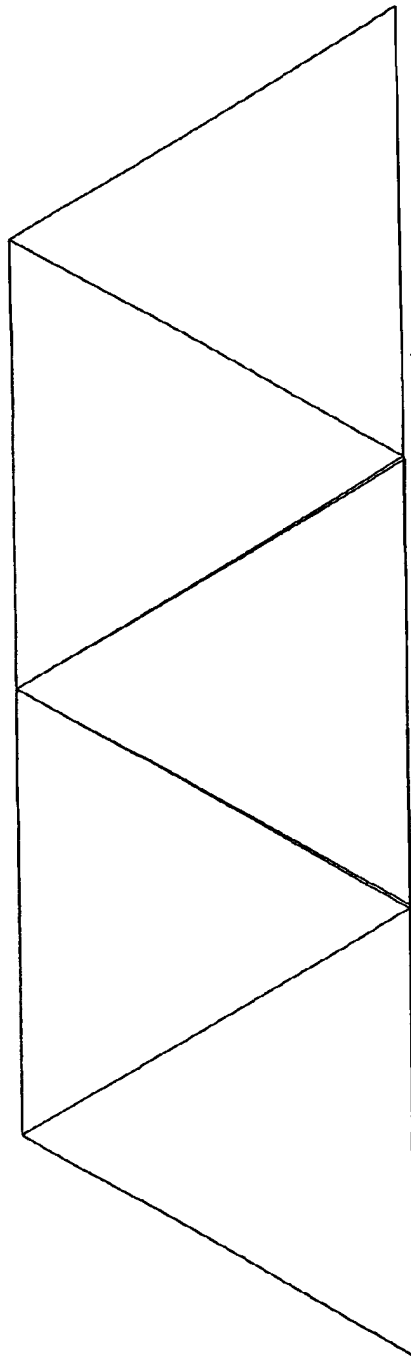






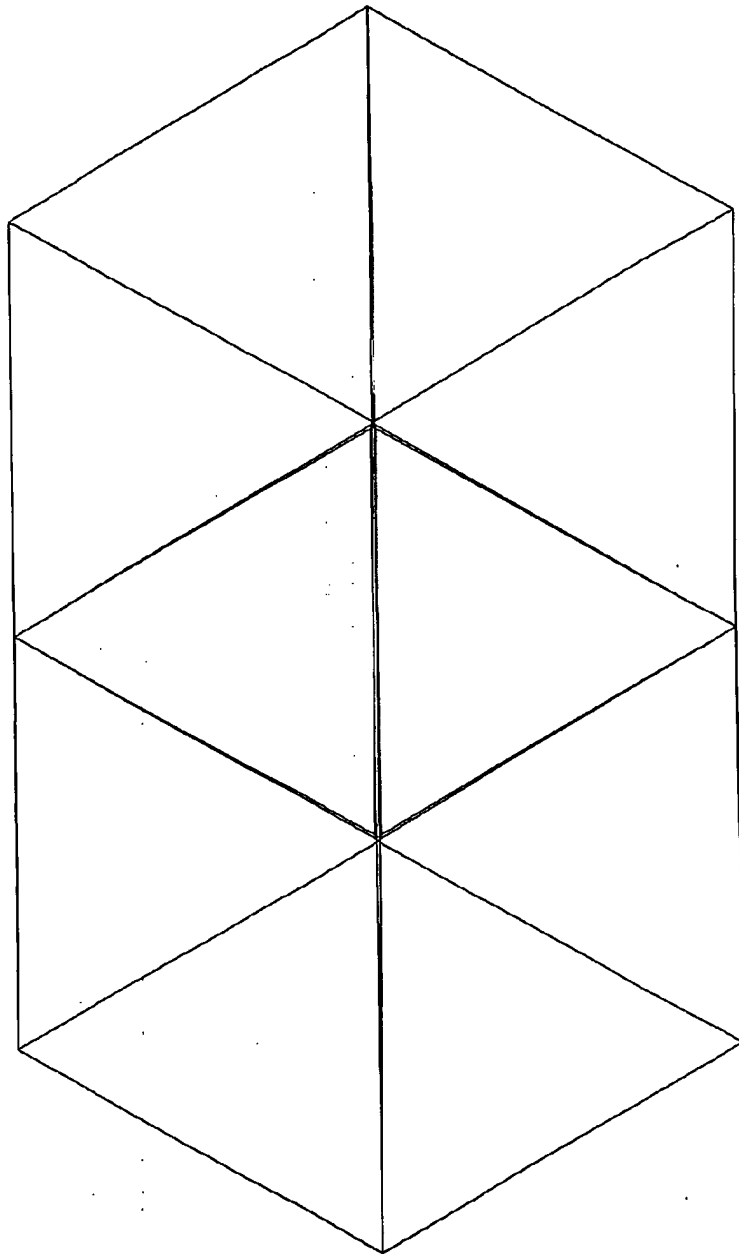
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Figure (6)



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Figure (7)



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Figure (8)

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/SD 01/00007

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A01G17/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A01G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>ESTEBAN HERRERA: "Designing a Pecan Orchard"</p> <p>COLLEGE OF AGRICULTURE &amp; HOME ECONOMICS,</p> <p>'Online! 12 May 2000 (2000-05-12),</p> <p>XP002184350</p> <p>New Mexico State University, Las Cruces,</p> <p>New Mexico (US)</p> <p>Retrieved from the Internet:</p> <p>&lt;URL:http://www.cahe.nmsu.edu/pubs/_h/h-60</p> <p>7.html&gt; 'retrieved on 2001-11-29!</p> <p>page 1, last paragraph; figure 1d</p> <p>(Triangle)</p> <p style="text-align: center;">--- -/-</p>	1

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PCT/SD 01/00007

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>BRUNO GADRAT: "Alignement des Plantations"  DESIGN VEGETAL ET ARCHITECTURE DES PAYSAGES, 'Online!  18 March 2000 (2000-03-18), XP002184351  Sainte Marie Marieville, Quebec (CA)  Retrieved from the Internet:  &lt;URL:http://designvegetal.com/gadrat/a/alignement/alignement.html&gt;  'retrieved on 2001-11-29!  page 2, paragraph "Les principaux systèmes de remplissage des surfaces : le remplissage régulier"; figure "Quinconce équilatéral"</p> <p>-----</p>	1